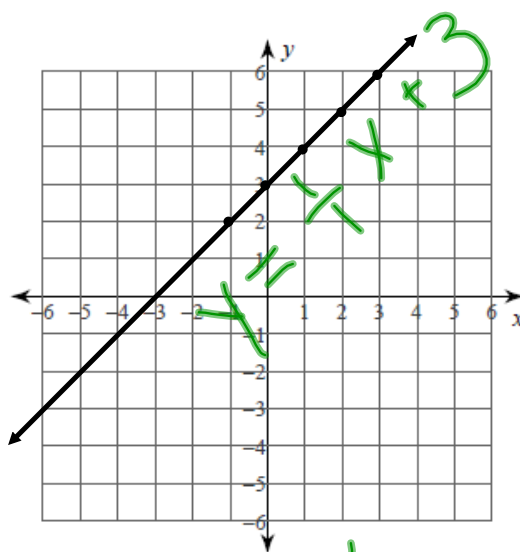


WARM UP

Write the equation of a line that has a slope of 1 and passes through the point $(1, 2)$

HINTS:

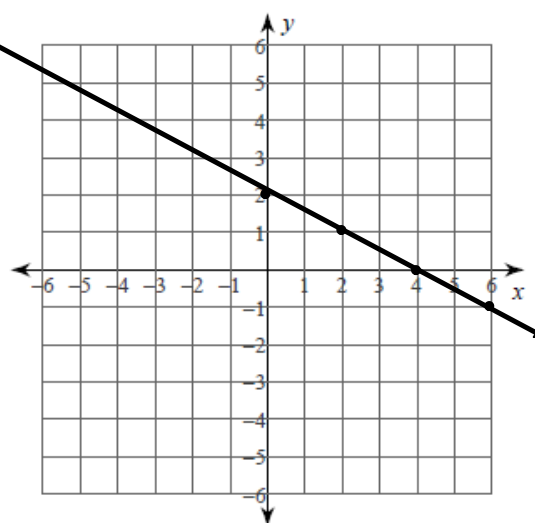
- 1) Plot the Given point
- 2) Continue the line across the whole grid using the slope
- 3) Write the equation as $y=mx+b$



Try it again!

Write the equation of a line that has a slope of $-\frac{1}{2}$ and passes through the point $(4, 0)$


$$y = \underline{-\frac{1}{2}}x + \underline{2}$$



LITERAL EQUATIONS

A Literal Equation is an equation that has **more than one variable**. Formulas are good examples of literal equations.

Examples of **literal equations**:

$$I = PRT$$
$$D = RT$$
$$P = 2L + 2W$$
$$2x + 4y = 10$$

$$abc = def$$

Algebra EET Grant

Mini Lesson

$$y = mx + b$$

$m = \text{slope}$ $b = \text{y-intercept}$

Let's see how solving a **LITERAL EQUATION** compares to solving a **"REGULAR" EQUATION**.

Solve for y:

$$3 - 9y = 18$$

$$\begin{array}{r|l} -3 & -3 \\ \hline -9y & 15 \\ \hline y & -\frac{5}{3} \end{array}$$

$y = -\frac{5}{3}$

Solve for y:

$$4 - 7y = 25$$

$$\begin{array}{r|l} -4 & -4 \\ \hline -7y & 21 \\ \hline y & -3 \end{array}$$

$y = -3$

Solve for y:

$$3x - 9y = 18$$

$$\begin{array}{r|l} -3x & -3x \\ \hline -9y & -3x + 18 \\ \hline y & \frac{1}{3}x - 2 \end{array}$$

$y = \frac{1}{3}x - 2$

Solve for y:

$$4 - 7y = 25x$$

$$\begin{array}{r|l} -4 & -4 \\ \hline -7y & 25x - 4 \\ \hline y & -\frac{25}{7}x + \frac{4}{7} \end{array}$$

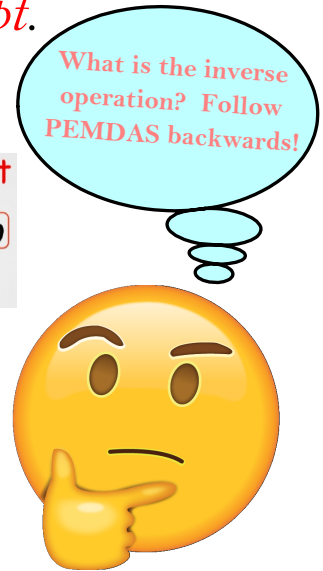
$y = -\frac{25}{7}x + \frac{4}{7}$

Solve for y and state the *slope* and *y-intercept*.

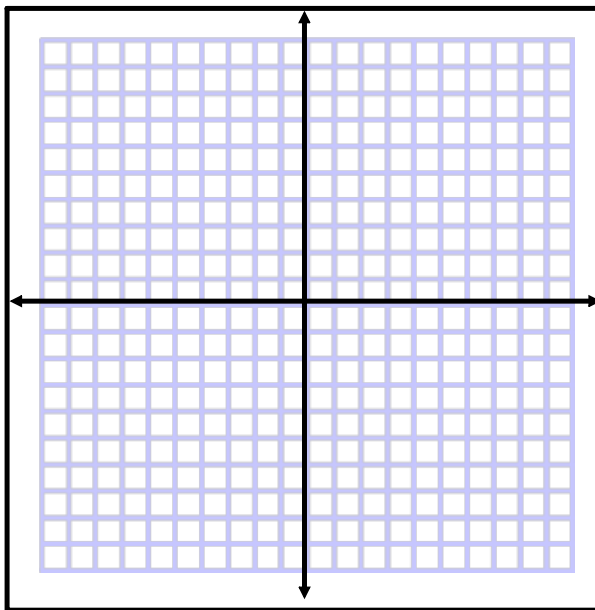
$$\begin{array}{r}
 \cancel{-2x} + 4y = 10 \\
 \hline
 4y = -2x + 10 \\
 \hline
 y = -\frac{1}{2}x + \frac{5}{2}
 \end{array}$$

Slope: $-\frac{1}{2}$
 y-intercept: $\frac{5}{2}$

$y = mx + b$
 Range: y
 Domain: x
 Slope: m
 y-intercept: b

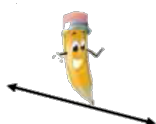


Graph the linear equation



Find three points on your calculator

x	y



$$-2x + y = -4$$

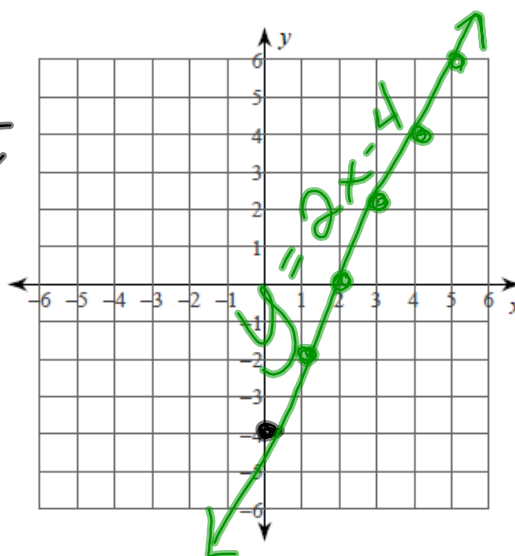
$$\begin{array}{r|l} +2x & +2x \\ \hline y & = 2x - 4 \end{array}$$

$y = 2x - 4$

Slope $\frac{2}{1}$ $\begin{matrix} \uparrow \\ \rightarrow \end{matrix}$

y-int \uparrow

x	y





$$4x + 2y = 6$$

$\begin{array}{r} -4x \\ \hline \end{array}$

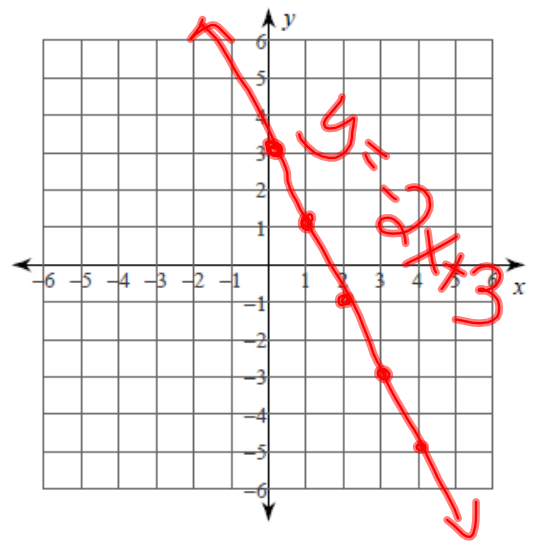
$$\cancel{2}y = \frac{-4x}{2} + \frac{6}{2}$$

$$y = -2x + 3$$

↓ 2
→ 1

y-int

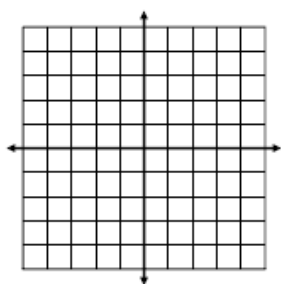
x	y



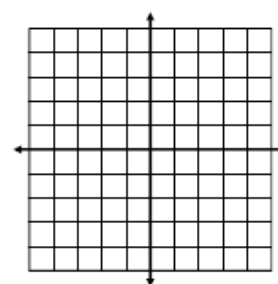
Graphing Linear Equations

Extra Practice

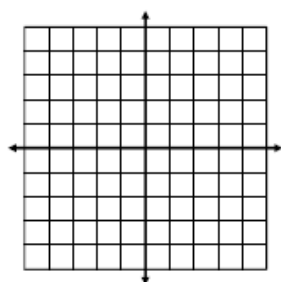
$$5x - 4y = -20$$



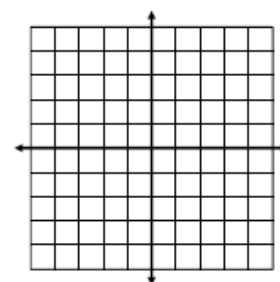
$$2x - 10y = 20$$



$$x - y = -4$$



$$6x - 2y = 10$$



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